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AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-04-02-01**	**Date: 04-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	02-04-17	
Sample ID No	:	2017-04-02-01-01	
Type of Mix	:	WMM (Wet Mix Macadam)	
Date of test	:	02-04-17	

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	345.0	345.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	71.9	72.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	272.8	272.3
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.7
5	Aggregate impact value	(B/A)*100	20.8	20.9
6	Aggregate impact value (Mean of two tests)	Pecentage	20.9	

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

Note:-

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Prepared By:
Harshitha

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.
R KARTHIK RECHAN
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Quality Manager

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-04-06-01** **Date: 08-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-04-17
Sample ID No	:	2017-04-06-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	06-04-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	344.0	344.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	71.9	72.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	271.8	271.6
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.4
5	Aggregate impact value	(B/A)*100	20.9	20.9
6	Aggregate impact value (Mean of two tests)	Pecentage	20.9	

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore - 97

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-04-10-01** **Date: 12-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-04-17
Sample ID No	:	2017-04-10-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	10-04-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	345.0	345.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	70.1	69.9
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	274.6	274.6
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.5
5	Aggregate impact value	(B/A)*100	20.3	20.3
6	Aggregate impact value (Mean of two tests)	Pecentage	20.3	

Asisstant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore - 97

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-02-01**	**Date: 04-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	02-04-17	
Sample ID No	:	2017-04-02-01-01	
Type of Mix	:	WMM (Wet Mix Macadam)	
Date of test	:	02-04-17	

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	15.2%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.1%	
Combined Flakiness and Elongation Index for WMM	27.3%	

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore -97

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Quality Manager

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-06-01** **Date: 08-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-04-17
Sample ID No	:	2017-04-06-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	06-04-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	16.2%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	13.1%	
Combined Flakiness and Elongation Index for WMM	29.3%	

Assistant Executive Engineer, Vidyaranyapura Sub Division BBMP, Bangalore-97

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-10-01** **Date: 12-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-04-17
Sample ID No	:	2017-04-10-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	10-04-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	14.5%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.7%	
Combined Flakiness and Elongation Index for WMM	27.2%	

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-02-01** **Date: 04-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-04-17
Sample ID No	:	2017-04-02-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	02-04-17
Oven Dry Weight(gm)	:	11640

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	340	340	2.92	97.08	95-100
22.4	2259	2599	22.33	77.67	60-80
11.2	2196	4795	41.19	58.81	40-60
4.75	2258	7053	60.59	39.41	25-40
2.36	1607	8660	74.40	25.60	15-30
0.6	620	9280	79.73	20.27	8-22
0.075	2160	11440	98.28	1.72	0-5

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-04-01** **Date: 06-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-04-17
Sample ID No	:	2017-04-04-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	04-04-17
Oven Dry Weight(gm)	:	11800

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	370	370	3.14	96.86	95-100
22.4	2289	2659	22.53	77.47	60-80
11.2	2196	4855	41.14	58.86	40-60
4.75	2258	7113	60.28	39.72	25-40
2.36	1657	8770	74.32	25.68	15-30
0.6	640	9410	79.75	20.25	8-22
0.075	2180	11590	98.22	1.78	0-5

Assistant Executive Engineer
Vidyaranyapura Sub Division
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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-06-01** **Date: 08-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-04-17
Sample ID No	:	2017-04-06-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	06-04-17
Oven Dry Weight(gm)	:	11200

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	370	370	3.30	96.7	95-100
22.4	2189	2559	22.85	77.2	60-80
11.2	2096	4655	41.56	58.4	40-60
4.75	2158	6813	60.83	39.2	25-40
2.36	1557	8370	74.73	25.3	15-30
0.6	540	8910	79.55	20.4	8-22
0.075	2180	11090	99.02	1.0	0-5

Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore - 97

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Page 1/1
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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-08-01** **Date: 10-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	08-04-17
Sample ID No	:	2017-04-08-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	08-04-17
Oven Dry Weight(gm)	:	11450

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	370	370	3.23	96.77	95-100
22.4	2189	2559	22.35	77.65	60-80
11.2	2196	4755	41.53	58.47	40-60
4.75	2258	7013	61.25	38.75	25-40
2.36	1607	8620	75.28	24.72	15-30
0.6	540	9160	80.00	20.00	8-22
0.075	2180	11340	99.04	0.96	0-5

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-10-01** **Date: 12-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-04-17
Sample ID No	:	2017-04-10-01-01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	10-04-17
Oven Dry Weight(gm)	:	11950

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	390	390	3.26	96.74	95-100
22.4	2189	2579	21.58	78.42	60-80
11.2	2396	4975	41.63	58.37	40-60
4.75	2258	7233	60.53	39.47	25-40
2.36	1807	9040	75.65	24.35	15-30
0.6	640	9680	81.00	19.00	8-22
0.075	2180	11860	99.25	0.75	0-5

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore - 97

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-12-01** **Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-04-17
Sample ID No	:	2017-04-12-01/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	12-04-17

Result:

Flakiness Index	10.1%
Elongation Index	9.5%
Combined Flakiness & Elongation Index for SDBC	19.6%

Comments:

Maximum allowable Flakiness & Elongation Index For SDBC is 30 %

Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore - 97

Note:-

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Prepared By:
Harshitha

SPECIFIC GRAVITY AND WATER ABSORPTION TEST
IS:2386 (Part III)

Lab ID : **CP-RW-2017-04-12-01** **Date: 15-04-17**
Customer : Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address : Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name : Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency : K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference : BBMP/EE/BTP/WO/19/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 12-04-17
Sample ID No : 2017-04-12-01/01
Type of Mix : SDBC (Semi Dense Bituminous concrete)
Date of test : 12-04-17

Sl.No	Details of Observations	Index	Unit	Test 1	Test 2	Mean Value
1	Weight of Wet aggregates + Basket suspended in water	A1	grams	2174	2198	
2	Weight of Empty Basket suspended in water	A2	grams	791	791	
3	Weight of Aggregates in water	A=A1-A2	grams	1383	1407	
4	Weight of Saturated Surface Dry aggregate	B	grams	2212	2248	
5	Weight of oven dried aggregate	C	grams	2204	2240	
6	Specific gravity	C/(B-A)		2.66	2.66	2.66
7	Apparent Specific gravity	C/(C-A)		2.68	2.69	2.69
8	Water absorption	100*(B-C) /C	Percent	0.36	0.36	0.36

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore 97

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R.KARTHIK RECHAN
Authorized Signature
Quality Manager

Prepared By:
Harshitha

End of Report

TEST RESULTS OF GRADATION FOR SDBC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-12-01**	**Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	12-04-17	
Sample ID No	:	2017-04-12-01/01	
Type of Mix	:	SDBC-Plant (Semi Dense Bituminous Concrete)	
Date of test	:	12-04-17	
Oven Dry Weight(gm)	:	5000	

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100	100
9.5	328	328	6.6	93.4	90-100
4.75	2276	2604	52.1	47.9	35-51
2.36	1029	3633	72.7	27.3	24-39
1.18	515	4148	83.0	17.0	15-30
0.3	298	4446	88.9	11.1	9-19
0.075	243	4689	93.8	6.2	3-8
PAN	311	5000	100.00	0.00	0

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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Prepared By:
Harshitha

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TESTS RESULTS ON AGGREGATE IMPACT VALUE
(IS:2386 Part IV)

Lab ID	:	**CP-RW-2017-04-12-01**	**Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	12-04-17	
Sample ID No	:	2017-04-12-01/01	
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)	
Date of test	:	12-04-17	

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	310.5	310.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	71.1	73.5
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	238.6	235.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.8	0.9
5	Aggregate impct value	(B/A)*100	22.9	23.7
6	Aggregate impct value (Mean of two tests)		23.3	

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

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Prepared By:
Harshitha

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End of Report

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2017-04-12-01** **Date: 15-04-17**
Customer	:	Assistant Executive Engineer, Vidayranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidayranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Cross, 4th Main, HAL 3rd stage, Thippasandra, Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	12-04-17
Sample ID No	:	2017-04-12-01/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	12-04-17

The results of the tests conducted on the Semi Dense Bituminous Boncrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11&500-16
1	Marshal Stability at 60°C, KN	10.54	10.11	8.2KN(min)
2	Marshal flow at 60°C, mm	3.22	3.29	2-4
3	Percent air Voids	4.59	4.25	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.88	14.94	Min 14
5	Percent Voids filled with Bitumen(VFB %)	70.32	70.0	65-75
6	Density, g/cc	2.26	2.24	–

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore 97

Note:-
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Harshitha

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2017-04-12-03**	**Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer's Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	12-04-17	
Sample ID No	:	2017-04-12-03/01	
Sample Type	:	Bitumen	
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004), Stripping Value IS:6241-1971((Reaffirmed-2003)	
Date of test	:	12-04-17	

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**68.5**	60 to 70
2	Softening Point, °C	**51.2**	Min. 40°C
3	Ductility, cm	**95**	Min. 75cm
4	Flash point, °C	**232.5**	Min. 220°C
	Fire point, °C	**288.5**	
5	Stripping Value	**2.0**	Not more than 5%

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

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TEST RESULTS OF BITUMEN CONTENT FOR SDBC
(AS per IRC:SP:-11-1984)

Lab ID	:	**CP-RW-2017-04-16-02**	**Date: 17-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	16-04-17	
Sample ID No	:	2017-04-16-02/01	
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)	
Date of test	:	16-04-17	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	473	474
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.40	5.20
4	Average percentage	%	5.30	

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

Prepared By:
Harshitha

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Authorized Signatory
Quality Manager

Lab ID : **CP-RW-2017-04-16-02** **Date: 17-04-17**

Sample ID No : **2017-04-16-02/01**

AFTER EXTRACTION (Trail-1)

Oven Dry Weight(gm) : 473

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	11	11	2.3	97.7	90-100
4.75	226	237	50.1	49.9	35-51
2.36	102	339	71.7	28.3	24-39
1.18	56	395	83.5	16.5	15-30
0.3	21	416	87.9	12.1	9-19
0.075	39	455	96.2	3.8	3-8

AFTER EXTRACTION (Trail-2)

Oven Dry Weight(gm) : 474

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	16	16	3.4	96.6	90-100
4.75	223	239	50.4	49.6	35-51
2.36	82	321	67.7	32.3	24-39
1.18	65	386	81.4	18.6	15-30
0.3	43	429	90.5	9.5	9-19
0.075	29	458	96.6	3.4	3-8

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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Quality Manager

End of Report

TEST RESULTS OF BITUMEN CONTENT FOR SDBC
(AS per IRC:SP:-11-1984)

Lab ID	:	**CP-RW-2017-04-16-01**	**Date: 17-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	16-04-17	
Sample ID No	:	2017-04-16-01/01	
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)	
Date of test	:	16-04-17	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	502	503
2	Weight of the sample After extraction	B	476	477
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.18	5.17
4	Average percentage	%	5.17	

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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Lab ID : **CP-RW-2017-04-16-01** **Date: 17-04-17**

Sample ID No : **2017-04-16-01/01**

AFTER EXTRACTION (Trail-1)

Oven Dry Weight(gm) : 476

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	19	19	4.0	96.0	90-100
4.75	250	269	56.5	43.5	35-51
2.36	76	345	72.5	27.5	24-39
1.18	33	378	79.4	20.6	15-30
0.3	53	431	90.5	9.5	9-19
0.075	17	448	94.1	5.9	3-8

AFTER EXTRACTION (Trail-2)

Oven Dry Weight(gm) : 477

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	27	27	5.7	94.3	90-100
4.75	225	252	52.8	47.2	35-51
2.36	81	333	69.8	30.2	24-39
1.18	45	378	79.2	20.8	15-30
0.3	53	431	90.4	9.6	9-19
0.075	21	452	94.8	5.2	3-8

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

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Harshitha

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Authorized Signatory
Quality Manager

End of Report

SPECIFIC GRAVITY AND WATER ABSORPTION TEST
(IS:2386 Part III)

Lab ID	:	**CP-RW-2017-04-12-02**	**Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Agency	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Project Name	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	12-04-17	
Sample ID No	:	2017-04-12-02/01	
Type of Mix	:	BC (Bituminous Concrete)	
Date of test	:	12-04-17	

Sl.No	Details of Observations	Index	Unit	Test 1	Test 2	Mean Value
1	Weight of Wet aggregates + Basket suspended in water	A1	grams	2245	2261	
2	Weight of Empty Basket suspended in water	A2	grams	791	791	
3	Weight of Aggregates in water	A=A1-A2	grams	1454	1470	
4	Weight of Saturated Surface Dry aggregate	B	grams	2365	2379	
5	Weight of oven dried aggregate	C	grams	2360	2372	
6	Specific gravity	C/(B-A)		2.59	2.61	2.60
7	Apparent Specific gravity	C/(C-A)		2.60	2.63	2.62
8	Water absorption	100*(B-C) /C	Percent	0.21	0.30	0.25

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore 97

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TESTS RESULTS ON AGGREGATE IMPACT VALUE
(IS:2386 Part IV)

Lab ID	:	**CP-RW-2017-04-12-02**	**Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Agency	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Project Name	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	12-04-17	
Sample ID No	:	2017-04-12-02/01	
Type of Mix	:	BC (Bituminous Mecadam)	
Date of test	:	12-04-17	

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	315.1	315.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	65.9	67.5
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	248.6	246.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.6	0.7
5	Aggregate impct value	(B/A)*100	20.91	21.43
6	Aggregate impct value (Mean of two tests)		21.17	

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2017-04-12-02** **Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Agency	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Project Name	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	12-04-17
Sample ID No	:	2017-04-12-02/01
Type of Mix	:	BC (Bituminous Mecadam)
Date of test	:	12-04-17

The results of the tests conducted on the Bituminous Boncrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.14	11.03	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.61	2-4
3	Percent air Voids	4.82	4.73	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.16	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	70.63	65-75
6	Density, g/cc	2.35	2.36	–

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2017-04-18-01**	**Date: 19-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	18-04-17	
Sample ID No	:	2017-04-18-01-01	
Type of Mix	:	BC (Bituminous Concrete)	
Date of test	:	18-04-17	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	472	471
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.6	5.8
4	Average percentage	%	5.7	

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

Prepared By:
Harshitha

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Lab ID : **CP-RW-2017-04-18-01** **Date: 19-04-17**

Sample ID : **2017-04-18-01-01**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	13	13	2.8	97.2	90-100
9.5	65	78	16.5	83.5	70-88
4.75	89	167	35.4	64.6	53-71
2.36	112	279	59.1	40.9	42-58
1.18	26	305	64.6	35.4	34-48
0.6	34	339	71.8	28.2	26-38
0.3	31	370	78.4	21.6	18-28
0.15	31	401	85.0	15.0	12-20
0.075	49	450	95.3	4.7	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 471

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	15	15	3.2	96.8	90-100
9.5	62	77	16.3	83.7	70-88
4.75	88	165	35.0	65.0	53-71
2.36	102	267	56.7	43.3	42-58
1.18	27	294	62.4	37.6	34-48
0.6	41	335	71.1	28.9	26-38
0.3	36	371	78.8	21.2	18-28
0.15	30	401	85.1	14.9	12-20
0.075	43	444	94.3	5.7	4-10

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

Note:
The results pertain to the samples received and tested.
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Harshitha

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2017-04-18-01**	**Date: 19-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.	
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.	
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	18-04-17	
Sample ID No	:	2017-04-18-01-02	
Type of Mix	:	BC (Bituminous Concrete)	
Date of test	:	18-04-17	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	501
2	Weight of the sample After extraction	B	472	474
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.6	5.4
4	Average percentage	%	5.5	

Assistant Executive Engineer
Vidyaranyapura Sub Division
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Lab ID : **CP-RW-2017-04-18-01** **Date: 19-04-17**

Sample ID : **2017-04-18-01-02**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	11	11	2.3	97.7	90-100
9.5	66	77	16.3	83.7	70-88
4.75	87	164	34.7	65.3	53-71
2.36	102	266	56.4	43.6	42-58
1.18	24	290	61.4	38.6	34-48
0.6	32	322	68.2	31.8	26-38
0.3	30	352	74.6	25.4	18-28
0.15	28	380	80.5	19.5	12-20
0.075	55	435	92.2	7.8	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	14	14	3.0	97.0	90-100
9.5	82	96	20.3	79.7	70-88
4.75	116	212	44.7	55.3	53-71
2.36	61	273	57.6	42.4	42-58
1.18	29	302	63.7	36.3	34-48
0.6	45	347	73.2	26.8	26-38
0.3	25	372	78.5	21.5	18-28
0.15	21	393	82.9	17.1	12-20
0.075	42	435	91.8	8.2	4-10

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore-97

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-12-02** **Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-04-17
Sample ID No	:	2017-04-12-02/01
Type of Mix	:	BC-Plant (Bituminous Concrete)
Date of test	:	12-04-17
Oven Dry Weight(gm)	:	5000

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	86	86	1.7	98.3	90-100
9.5	710	796	15.9	84.1	70-88
4.75	997	1793	35.9	64.1	53-71
2.36	876	2669	53.4	46.6	42-58
1.18	501	3170	63.4	36.6	34-48
0.6	498	3668	73.4	26.6	26-38
0.3	286	3954	79.1	20.9	18-28
0.15	329	4283	85.7	14.3	12-20
0.075	350	4633	92.7	7.3	4-10
PAN	367	5000	100	0.0	0

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS:2386 Part 1)

Lab ID	:	**CP-RW-2017-04-12-02** **Date: 15-04-17**
Customer	:	Asisstant Executive Engineer, Vidyaranyapura, Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura, Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drains at BEL 2nd Block in Ward No.10 Vidyaranyapura Sub Division.
Agency	:	K.Anil Kumar, #84-L, 2nd Floor, 3rd Stage, Thippasandra, Bangalore-75.
Customer Reference	:	BBMP/EE/BTP/WO/19/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-04-17
Sample ID No	:	2017-04-12-02/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	12-04-17

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 500-16
Flakiness Index	10.5%	Combined Flakiness & Elongation Index for BC is Maximum 35%
Elongation Index	8.2%	
Combined Flakiness and Elongation Index for BC	18.7%	

Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore - 97

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